

## Test Procedure for §170.302 (e) (1) Vital signs

This document describes the draft test procedure for evaluating conformance of complete EHRs or EHR modules to the certification criteria defined in 45 CFR Part 170 Subpart C of the Interim Final Rule (IFR) as published in the Federal Register on January 13, 2010. The document is organized by test procedure and derived test requirements with traceability to the normative certification criteria as described in the Overview document located at <http://healthcare.nist.gov>. These test procedures will be updated to reflect the certification criteria defined in the ONC Final Rule.

### CERTIFICATION CRITERIA

§170.302 (e)(1) Vital signs. Enable a user to electronically record, modify, and retrieve a patient's vital signs including, at a minimum, the height, weight, blood pressure, temperature, and pulse.

### INFORMATIVE TEST DESCRIPTION

This section provides an informative description of how the test procedure is organized and conducted. It is not intended to provide normative statements of the certification requirements.

This test evaluates the capability for a Complete EHR or combination of EHR Modules to enable a user to electronically record, modify, and retrieve a patient's vital signs including the height, weight, blood pressure, temperature, and pulse. This test procedure is organized into three sections:

- Record - evaluates the capability to enter vital signs data into the EHR system
  - The Tester enters the NIST-supplied height, weight, blood pressure, temperature and pulse data
- Modify – evaluates the capability to edit vital signs data which have been previously entered into the EHR
  - The Tester displays the height, weight, blood pressure, temperature and pulse data entered during the Record Patient Vital Signs test
  - The Tester edits the previously entered vital signs data using NIST-supplied height, weight, blood pressure, temperature and pulse data
- Retrieve – evaluates the capability to display and view the vital signs data which have been previously entered into the EHR
  - The Tester displays the height, weight, blood pressure, temperature and pulse data entered during the test
  - The Tester validates that the displayed vital signs data are accurate and complete

### REFERENCED STANDARDS

None

## NORMATIVE TEST PROCEDURES

### Derived Test Requirements

- DTR170.302.e.1 – 1: Electronically Record Patient Vital Signs  
DTR170.302.e.1 – 2: Electronically Modify Patient Vital Signs  
DTR170.302.e.1 – 3: Electronically Retrieve Patient Vital Signs

### DTR170.302.e.1 – 1: Electronically Record Patient Vital Signs

#### Required Vendor Information

- VE170.302.e.1 – 1.01: Vendor shall identify a patient with an existing record in the EHR to be used for this test
- VE170.302.e.1 – 1.02: Vendor shall identify the EHR function(s) that are available to: 1) select the patient, 2) enter the patient's height, weight, blood pressure, temperature and pulse, 3) modify (correct) these vital signs data, and 4) retrieve these vital signs data

#### Required Test Procedure:

- TE170.302.e.1 – 1.01: Tester shall select vital signs test data from NIST-supplied test data sets
- TE170.302.e.1 – 1.02: Using the EHR function(s) identified by the Vendor, the Tester shall select the patient's existing record and enter vital signs from the test data sets for
- the patient's height
  - the patient's weight
  - the patient's blood pressure
  - the patient's temperature
  - the patient's pulse
- TE170.302.e.1 – 1.02: Using the NIST-supplied Inspection Test Guide, the Tester shall verify that the vital signs test data have been entered correctly and without omission

#### Inspection Test Guide

- IN170.302.e.1 – 1.01: Tester shall verify that the required units of measure appropriate for each vital sign are displayed or can be selected at the time each vital sign is entered
- IN170.302.e.1 – 1.02: Tester shall verify that the vital signs test data are entered correctly and without omission
- IN170.302.e.1 – 1.03: Tester shall verify that the vital signs test data are stored in the patient's record, including
- the patient's height
  - the patient's weight
  - the patient's blood pressure
  - the patient's temperature

- the patient's pulse

## **DTR170.302.e.1 – 2: Electronically Modify Patient Vital Signs**

### Required Vendor Information

- No additional information required

### Required Test Procedure:

TE170.302.e.1 – 2.01: Tester shall select vital signs test data from NIST-supplied test data sets

TE170.302.e.1 – 2.02: Using the EHR function(s) identified by the Vendor, the Tester shall select the patient's existing record, shall display each of the vital signs entered during the Record Patient Vital Signs test, and shall edit (correct) each of these previously entered vital signs, including

- the patient's height
- the patient's weight
- the patient's blood pressure
- the patient's temperature
- the patient's pulse

TE170.302.e.1 – 2.03: Using the NIST-supplied Inspection Test Guide, the Tester shall verify that the patient vital signs data entered in the Modify Patient Vital Signs test have been entered correctly and without omission

### Inspection Test Guide:

IN170.302.e.1 – 2.01: Tester shall verify that the required units of measure appropriate for each vital sign are displayed or can be selected at the time each vital sign is edited

IN170.302.e.1 – 2.02: Tester shall verify that the vital signs test data entered during the Record Patient Vital Signs test can be accessed and edited

IN170.302.e.1 – 2.03: Tester shall verify that the modified vital signs data are stored in the patient's record, including

- the patient's height
- the patient's weight
- the patient's blood pressure
- the patient's temperature
- the patient's pulse

## **DTR170.302.e.1 – 3: Electronically Retrieve Patient Vital Signs**

### Required Vendor Information

- No additional information required

#### Required Test Procedure:

TE170.302.e.1 – 3.01: Using the EHR function(s) identified by the Vendor, the Tester shall select the patient's existing record and shall display and view the data the Tester entered during the Record Patient Vital Signs and Modify Patient Vital Signs tests for

- the patient's height
- the patient's weight
- the patient's blood pressure
- the patient's temperature
- the patient's pulse

TE170.302.e.1 – 3.02: Using the NIST-supplied Inspection Test Guide, the Tester shall verify that the vital signs test data display correctly and without omission

#### Inspection Test Guide

IN170.302.e.1 – 3.01: Tester shall verify that the required units of measure for each vital sign are displayed at the time each vital sign is viewed

IN170.302.e.1 – 3.02: Tester shall verify that the vital signs data entered during the Record Patient Vital Signs test and edited during the Modify Patient Vital Signs test display correctly and without omission, including

- the patient's height
- the patient's weight
- the patient's blood pressure
- the patient's temperature
- the patient's pulse

### EXAMPLE TEST DATA

#### Vital Signs Test Data Set 1

**Height:** 5 ft 6 in OR 1.67 meters  
**Weight:** 135 lbs OR 61.2 KG  
**Blood pressure:** 120/80 mmHg  
**Temperature:** 98.6 Fahrenheit OR 37.0 Centigrade  
**Pulse:** 80 bpm

**Height:** 5 ft 3 in OR 1.60 meters  
**Weight:** 130 lbs OR 59 Kg  
**Blood pressure:** 130/80 mmHg  
**Temperature:** 99.0 Fahrenheit OR 37.2 Centigrade  
**Pulse:** 86 bpm

#### Vital Signs Test Data Set 2

**Height:** 6 ft 1 in OR 1.85 meters  
**Weight:** 200 lbs OR 90.7 Kg  
**Blood pressure:** 110/70  
**Temperature:** 97.8 Fahrenheit OR 36.6 Centigrade  
**Pulse:** 70

**Height:** 6 ft 2 in OR 1.88 meters  
**Weight:** 210 lbs OR 95.3 Kg  
**Blood pressure:** 116/80  
**Temperature:** 97.4 Fahrenheit OR 36.3 Centigrade  
**Pulse:** 66

## CONFORMANCE TEST TOOLS

None